DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
690 Walnut Ave.St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 99.28

WELDING INSPECTION REPORT

Resident Engineer: Siegenthaler, Peter
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-018582
Date Inspected: 11-Dec-2010

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC)

OSM Arrival Time: 700
OSM Departure Time: 1900
Location: Shanghai, China

CWI Name: Li Yang and Zhu Zhong Hai

Inspected CWI report:	☐ Yes	☐ No	☑ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☐ Yes	☑ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

CWI Present: ☑ Yes ☐ No

Bridge No: 34-0006
Component: OBG Trial Assembly

Summary of Items Observed:

On this date Caltrans OSM Quality Assurance (QA) Inspector Mr. S. Manjunath Math was present during the time noted above for observations relative to the work being performed.

This QA Inspector randomly observed the following work in progress:

Orthotropic Box Girder (OBG) at Trial Assembly Areas

Segment 11BW to Segment 11CW (U-Rib to U-Rib)

This QA Inspector witnessed the final bolt tension verification on bolts connecting the U-Rib to U-Rib at the transverse splice between Panel Points (PP) 100 and PP 101 for Segment 11BW to Segment 11CW. The QA Inspector verified the bolt tension on a random basis and the results appeared to be in general compliance. The Inspection was performed against Notification No. 00569 dated December 11, 2010.

The bolt sizes used were M22 x 65 RC Lot # DHGM220115 and the final torque value established was 327 N-m.

The bolt sizes used were M22 x 70 RC Lot # DHGM220028 and the final torque value established was 440 N-m.

The bolt sizes used were M22 x 80 RC Lot # DHGM220094 and the final torque value established was 470 N-m.

The bolt sizes used were M22 x 85 RC Lot # DHGM220120 and the final torque value established was 407 N-m.

The Manual Torque wrench used was Serial No. XO2-776.

Note: QA Inspector observed Reinforced splice plates are installed at 1st U-Rib, 2nd U-Rib, 3rd U-Rib, 4th U-Rib, 5th U-Rib, 7th U-Rib, 8th U-Rib, 9th U-Rib, 10th U-Rib, 11th U-Rib, 12th U-Rib and 39th U-Rib. U-Ribs numbering reference taken from Work Point W2 (Counter Weight side) towards W5 (Cross Beam side).

Please reference the pictures attached for more comprehensive details.

Segment 11EE to Segment 12AE (Longitudinal Diaphragm to Longitudinal Diaphragm)

This QA Inspector performed Dimension Control Inspection along with Caltrans QA Inspector Mr. Murugan Manikandan on the Longitudinal Diaphragm to Longitudinal Diaphragm at Work Point E3 (Bike Path side) and at Work Point E4 (Cross Beam side) for the Segment 11EE to Segment 12AE (Field Splice) between Panel Point (PP) 108 to PP 109 at the following locations:

The offset was measured at 5 (five) different locations in which 2 (Two) locations were at Flange area and 3 (Three) locations were at Web area. The QA Inspector measured the Offset using 1(One) Meter Straight Edge.

The Sweep was measured at 100 mm from both sides of the Floor Beam and 800mm from both sides of floor Beam and at Center (Total 5 Locations) using string line.

The measurements were recorded in the Dimension Control Plan (DCP) on a separate form and submitted to the Lead Inspector and Engineer for review and disposition.

Segment 12AE to Segment 12BE (Root Gap and Offset)

This QA Inspector performed Dimension Control Inspection along with Caltrans QA Inspector Mr. Murugan Manikandan for measuring root gap and offset on at the Transverse Splice for the Segment 12AE to Segment 12BE between Panel Point (PP) 112.5 to PP 113 at the following locations:

Work Point E2 towards Work Point E1 (Edge Panel Bike Path Side).

Work Point E1 towards Work Point E3 (Side Panel Bike Path Side).

Work Point E3 towards Work Point E4 (Bottom Panel).

Work Point E4 towards Work Point E6 (Side Panel Cross Beam Side).

Work Point E6 towards Work Point E5 (Edge Panel Cross Beam Side).

Work Point E5 towards Work Point E2 (Deck Panel).

The QA Inspector measured the root gap using 1(One) taper gauge and measured the offset using a bridge cam

gauge.

The measurements were recorded in the Dimension Control Plan (DCP) on a separate form and submitted to the Lead Inspector and Engineer for review and disposition.

Bike Path at Bay # 11

This QA Inspector performed Dimension Control Inspection on the Bike Path bottom plate for flatness check across the longitudinal butt weld. Flatness check was performed on following mentioned Bike Paths and Bike Path are identified as:

BK004A-017.

BK004A-053.

The QA Inspector measured the flatness using 600mm long straight edge across the Butt (CJP) weld and using 1500mm long straight edge between the stiffeners which are plug welded to bottom plate.

Observed flatness within the allowable tolerance.

The result of the inspection was informed to ZPMC QC Supervisor Mr. Xu Le Feng, ABF Mr. Man Kam Hon and Caltrans Lead Inspector Mr. Mark Miller and Mr. Hiranch Patel.

Segment 12AE to Segment 12BE (Transverse Splice at Edge Panel)

This QA Inspector observed the in-process welding by Shielded Metal Arc Welding (SMAW) process on a Complete Joint Penetration (CJP) groove weld. The Weld joint was designated as CA6502-007. The welder identification was 040320 and was observed welding in the 4G (Overhead) position using approved Welding Procedure Specification WPS-B-P-2214-B-U2-FCM-1. The piece mark was identified as the edge panel splice weld, Bike Path side.

Please reference the pictures attached for more comprehensive details.

Segment 12AE to Segment 12BE (Transverse Splice at Edge Panel)

This QA Inspector observed the in-process welding by Shielded Metal Arc Welding (SMAW) process on a Complete Joint Penetration (CJP) groove weld. The Weld joint was designated as OBE12-001. The welder identification was 044515 and was observed welding in the 4G (Overhead) position using approved Welding Procedure Specification WPS-B-P-2214-B-U2-FCM-1. The piece mark was identified as the edge panel splice weld, Cross Beam side.

Segment 11EW to Segment 12AW (Longitudinal Diaphragm- Heat Straightening)

This QA Inspector observed the ZPMC personnel’s performing Heat Straightening at Segment 11EW Longitudinal

Diaphragm to Segment 12AW Longitudinal Diaphragm at work point W4, Cross Beam side. Heat Straightening was performed to align them within the dimensional tolerance.

QA Inspector observed Heat Straightening was performed against Heat Straightening Report HSR1(B)-9935 dated Dec 07, 2010.

Please reference the pictures attached for more comprehensive details.

U-Rib Reinforced Plate

This QA Inspector observed the in-process welding by Shielded Metal Arc Welding (SMAW) process on a Complete Joint Penetration (CJP) groove weld. The Weld joint was designated as USPL1-653-001. The welder identification was 049220 and was observed welding in the 1G (Flat) position using approved Welding Procedure Specification WPS-B-T-2231-ESAB. The piece mark was identified as the U-Rib Reinforced Plate.

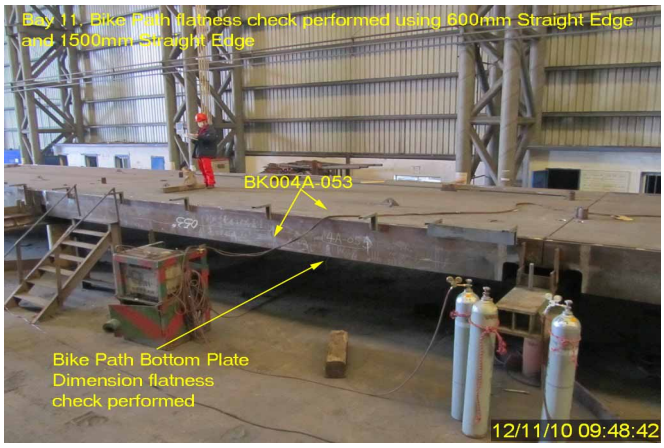
Please reference the pictures attached for more comprehensive details.

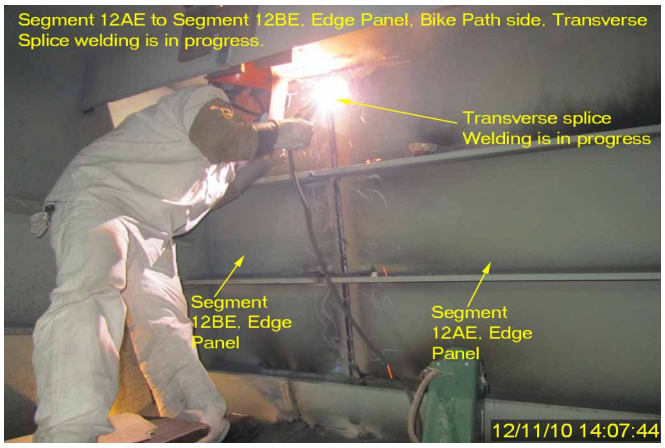
Segment 11DW to Segment 11EW

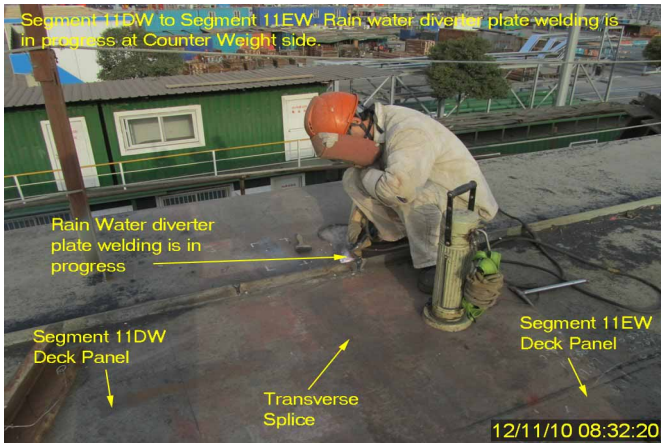
This QA Inspector observed the in process fillet weld repair welding by Shielded Metal Arc Welding (SMAW) process. The Weld joint was designated asOBW11E-044/045. The welder identification was 057333 and observed welding in the 2F (Horizontal) position using approved Welding Procedure Specification WPS-2112-FCM-1. The piece mark was identified as rain water diverter plate welded on Deck Panel.

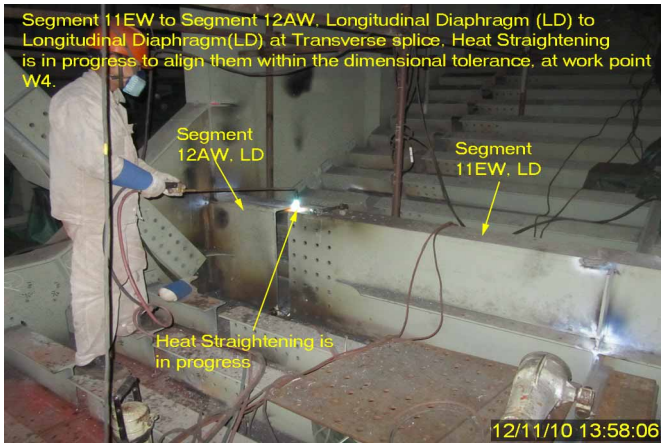
Please reference the pictures attached for more comprehensive details.

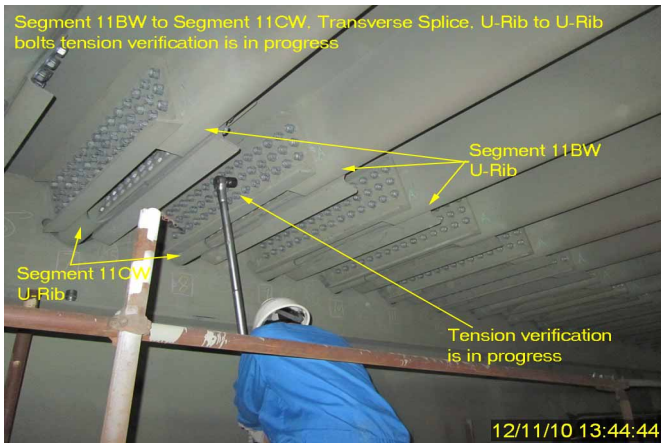
Unless otherwise noted, all work observed on this date appeared to generally comply with applicable contract documents.

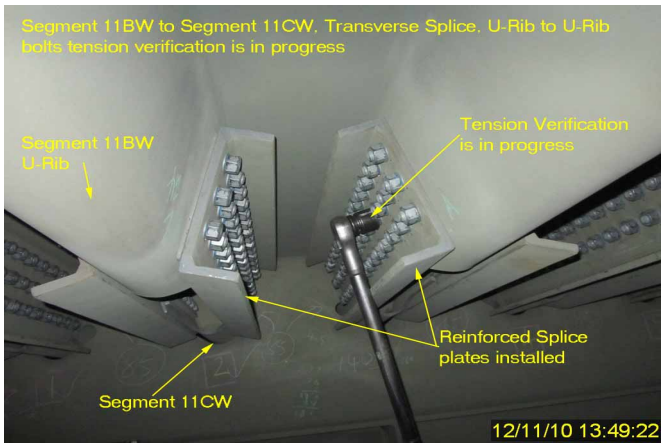












Summary of Conversations:

No relevant conversations were reported on this date.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Eric Tsang 150000422372, who represents the Office of Structural Materials for your project.

WELDING INSPECTION REPORT

(Continued Page 6 of 6)

Inspected By:	Math,Manjunath	Quality Assurance Inspector
Reviewed By:	Dsouza,Christopher	QA Reviewer